

**PATENT CLAIMS**

1. Switching converter, in which a said input voltage ( $U_E$ ) can be switched by  
5 means of at least one said controlled switch (S) to at least one said primary  
winding ( $W_P$ ) of a said transformer (UET), with a said control circuit (AST) for  
controlling the switch, to which a said regulating signal ( $S_R$ ) in the sense of the  
regulation of at least the said output voltage is sent, wherein the power supply  
10 of the said control circuit (AST) takes place via the forward voltage of a said  
auxiliary winding ( $W_1$ ) of the said transformer, a said rectifier (D2), a said  
capacitor (C) and a said series regulator (LAE), on the one hand, and, on the  
other hand, starting from the said input voltage ( $U_E$ ), via a current path ( $R_s$ )  
and a said storage capacitor ( $C_s$ ),

15 **characterized in that**

the off-state voltage of a said auxiliary winding ( $W_1; W_2$ ), which is rectified by  
means of a said rectifier (D4) is additionally sent to the said control circuit  
20 (AST) for power supply, wherein the said rectified off-state voltage is used to  
supply the said control circuit during the operation as long as it has a sufficient  
voltage level.

- 25
2. Switching converter in accordance with claim 1, **characterized in that** another  
said auxiliary winding ( $W_2$ ) of the said transformer (UET) is provided to  
generate the off-state voltage, the said off-state voltage being used via a said  
rectifier (D4) directly to supply the said control circuit (AST).
- 30
3. Switching converter in accordance with claim 1, **characterized in that** the  
said forward voltage as well as the said off-state voltage are taken from a said  
common auxiliary winding ( $W_1$ ), wherein said uncoupling/rectifier diodes (D2;

D2') rectify the said forward voltage and lead to the said series regulator (LAE), and said additional uncoupling/rectifier diodes (D4; D4') rectify the said off-state voltage and lead to the said supply voltage terminal of the said control circuit (AST).

5

4. Switching converter in accordance with one of the claims 1 through 3, **characterized in that** the output of the said series regulator (LAE) is connected with the said storage capacitor (Cs) via a said uncoupling diode (D3).